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1. The Oil Reserve of the Soviet Union.

There are no other new data on the oil reserve of the USSR besides those published in the 1937 edition of the Bolshaya Sovetskaya Entsiklopediya. However, it can be presumed from subsequent statements made by Soviet Government workers and from the 1st and 2nd Five Year Plans after the war and other newspaper and news reports from the Soviet, that the oil reserve is far greater than originally believed back in 1937. Especially, due to the discovery of rich oil fields in the Ural and Volga districts, which value was hidden for the past 20 years, it is expected that the data up to the present time should be revised.

Oil Reserves of the USSR in 1937
(in Million Tons)

	<u>Prepared & Prospected</u>	<u>Known</u>	<u>Total</u>	<u>Supposed</u>	<u>Geological</u>	<u>Grand Total</u>
Azerbaidzhan SSR	123.1	447.6	570.7	1,340.3	641.3	2,552.3
Georgian SSR	2.6	34.6	37.2	107.5	31.5	176.2
Grozny Raion	15.5	52.0	67.5	187.3	—	174.8
Dagestan Raion	20.0	47.5	67.5	78.5	—	146.0
Kuban - Black Sea Region	9.2	12.6	21.8	63.4	71.7	156.9
Baku Region	30.6	1.3	31.9	618.5	540.0	1,190.4
Western Urals, Volga Region & Kalmyk SSR	15.9	18.7	34.6	434.6	721.3	1,190.5
Northern (Ukhta) Region	0.7	10.0	10.7	11.4	—	22.1
Sikhaliin	10.3	10.1	20.4	98.5	220.9	339.8
Central Asia	3.0	17.3	20.3	134.4	272.4	427.1
Total in the USSR	230.9	651.7	882.6	2,994.4	2,499.1	6,376.1

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Although the basis for the determination of the estimated reserve as shown in the chart is not listed in the BSE, it is believed that, in general, it signifies the following conditions. In other words:

Prepared and Prepared: Those in production. Includes those which can be developed immediately.

Known: The existence of oil confirmed through selected test borings.

Supposed: Through other methods besides boring. For example, deposits estimated through means of geismology and through electro-magnetic methods.

Geological: The deposits which had been estimated through a geological survey of the region.

It is believed that these four categories are given in the order of greatest probability.

In an announcement made at the beginning of last year, the Minister for the Petroleum Industry in the Soviet Union brought out the fact that the importance of the Eastern region had increased tremendously in relation to the production of oil. A high percentage of oil production was achieved, especially in the Republics of Tartar and Bashkin. It is said that, as a result of a large scale geological survey and test diggings made in the Ural-Volga oil fields, large new oil deposits were discovered in the Republics of Bashkin and Tartar and in the Kuibyshev and Maletov regions. According to the Soviet announcement, the oil region lying between the Volga River and the Ural Mountain range has an area of approximately 40,000 square miles and is generally divided into six oil fields which are reported to have abundant oil beds. In a literature accompanying its fourth Five Year Plan, the Soviet Government refers to this oil production area as "the Second Baku". However, since the Soviet Government has stubbornly avoided giving any figures on its actual production in the newspapers, the amount is unknown.

The Soviet Government very seldom reveals its exact production figures and in most cases limits itself to percentage index figures. It is very rare that it reveals concrete data regarding the period in question. The production figure for 1953 was not even revealed in a speech given by MALENKOV at the Fifth Session of the Supreme Soviet of the USSR held on 8 August 1953.

The following chart showing the exact oil production figures in the Soviet Union was found in the Russkaya Sovetskaya Entsiklopediya, Moscow, I. Ed., Vol. XII, pp. 8010002; Pravda, Adamski Pa Istori Sovetskoi Gornoi Tekhniki, Moscow, 1950; GSE, Moscow, 2 ed., Vol. XII, p. 100; Izvestia, October 6-8, 1952; Pravda, January 24, 1955.

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Oil Production in the Soviet Union
(In Million Tons)

1910	9.85	
1913	9.23	
1920	3.78	
1927-1928	11.75	
1930	17.21	
1932	22.27	
1934	24.15	
1935	25.1	
1936	27.34	
1940	31.00	
1945	19.23	
1946	25.51	
1947	25.56	
1948	29.01	
1949	33.07	
1950	37.30	
1951	41.80	
1952	46.70	
1953	52.00	
1954	58.20	
1955	70.00	(Plan)

However, the statistics as given by the United Nations (Monthly Bulletin of Statistics, November, 1955), presents figures much lower than those found in the Soviet data.

United Nations Statistics
(In Million Metric Tons)

1938	25.20
1950	31.60
1951	35.20
1952	37.40
1953	44.00
1954	49.40

2. The Eastern Region of the Soviet Union in Relation to Oil Production.

As can be seen from the following chart, oil production in the Eastern region of the Soviet Union has rapidly increased in importance during the last 20 years.

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Chart (1)Oil Production in the Eastern Region

<u>Year</u>	<u>Actual Production (in Million Tons)</u>	<u>Ratio Per Total Soviet Production</u>
1940	13.72	12 per cent
1950 (Plan)	13.43	36 per cent
1954	14.90	60 per cent

The 1940 figures were obtained from a report given by VOZNESENSKY, Chairman of the National Planning Committee, at a meeting of the Supreme Soviet held on 15 Mar 1946. The 1954 figures were extracted from an editorial in Pravda dated 25 Feb 1954.

The heart of the oil industry was transferred to the Eastern region because of the rich oil reserves there and for strategic purposes. Since Baku is only 190 kilometers from the Iranian border, the Grozny region only 150 kilometers from the Turkish border, and Dagebyeh and Stanislav regions only 100 and 170 kilometers, respectively, from the Western border of the Soviet Union, it cannot be said that all of them are in a strategically secure position. In contrast, not only do the Ural-Volga oil bearing regions produce more than 50 per cent of the total Soviet oil output, but they are located 1,700 and 2,500 kilometers inland from the Western and Southern borders and, consequently, are in a defensively secure position.

The existence of a large oil field in the Ural-Volga regions, and based on the fact that Soviet heavy industries have moved and are continuing to move to the Eastern region, it is believed that, economically, the Eastern region will have much to offer in the future. For this reason, it is possible to conclude that the industrial zone in the Eastern region remains independent of the Southern and Western regions as far as demand for oil is concerned.

3. Is it Possible to Produce 70 Million Tons Under the Fifth Five Year Plan?

In comparing the 1953 and 1954 production figures with that of previous years, there was an increase of 5,100,000 tons and 6,200,000 tons, respectively, in actual quantity which meant that, percentage-wise, there was an increase of 12 per cent for both years. Consequently, this meant that in order to achieve the ultimate production goal of 70 million tons envisaged by the Fifth Plan, the production ratio for 1955 must be doubled; in other words, an actual quantity increase of 8,800,000 tons must be achieved. However,

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there are considerable doubts as to whether or not this sudden increase in production is possible. Not only must new oil beds be effectively developed, but it is absolutely necessary that preliminary steps such as prospecting, geological surveys, and test borings be carried out as planned.

However, in his speech made before the Central Committee and announced in the 17 Jul 1955 issue of Pravda, BULGANIN stated that all heavy industrial production, with the exception of iron and steel, had succeeded in attaining 70 per cent of the production goal.

On the other hand, official government announcements and Pravda editorials have mentioned from time to time of delays and difficulties encountered in carrying out the plans for development of oil beds. For example, recognizing the fact that prospecting thus far had not achieved the level both in result and speed, demanded by the petroleum industry, the Petroleum Industry Minister stated: "One of the chief faults of the geological survey and prospecting operations is that the test boring locations are too widely scattered. Furthermore, in many instances, prospecting is being conducted in areas which are not fully prepared, thus prolonging the operation and delaying, by several years, the industrial development of new oil fields. Included among these are the major oil producing areas such as Azerbaijan, Kazakhstan, Central Asia, and Turkmenia. Preparations for deep prospecting borings are considerably delayed in the Siberian region."

Under the Sixth Five Year Plan, a goal far exceeding the goal set under the Fifth Five Year Plan has been established, but due to the slow progress of technology and inadequate preparations, there will be many difficulties encountered before the goal is achieved.

4. Eastern Region of the Soviet Union in Relation to Coal Production.

As in the case of oil production, the Soviet Government, since World War II, has been progressively attempting to move the heart of its coal production some east of the Ural. In moving the center of the coal production some, there exists many difficulties such as the development of new mines and other problems involved collecting the coal. However, the Soviet Government has constantly made this the basic policy of her coal industry. It is believed that the following three major principles govern this policy: 1) Strategic reasons, 2) Influenced by the migration of other industries to the Eastern region, and 3) Center of coal resources is in the Eastern region.

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The Amount of Soviet Coal Reserves

The latest official estimate of the world's coal reserve was obtained in the announcement made at the International Geologic Congress held in Moscow in 1937. According to this, the total reserve of the Soviet Union was estimated at 1,654 billion tons. Assuming that additional coal discoveries were made, the current total reserve exceeds two trillion tons. As can be clearly seen in the following chart, included within this 1,654 billion tons is the 1,480 billion tons found in the Eastern region, and consequently, it clearly indicates the importance of the region as far as coal is concerned.

Coal Deposits in the USSR
(Billion Tons)

Asiatic Regions

Kuznetek Basin	451
Irkutsk Basin	81
Karaganda Basin	59
Chulyin-Yemisei Basin	43
Kansk Basin	42
Kizursinsk Basin	21
Bureya Basin	26
Other Asiatic Regions of the USSR	764
TOTAL	1,481

European Regions

Donets Basin	90
Pechora Basin	60
Other European Regions of the USSR	23
TOTAL	173

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The Soviet Union Eastern Region and Coal Production

In examining the total Soviet coal production from 1927 up to present times, the following figures are observed:

Soviet Coal Production
(In One Million Tons)

1927	32.99
1928	35.30
1932	64.33
1933	75.99
1937	128.00
1940	166.00
1943	148.00
1947	182.00
1949	235.90
1950	250.00
1952	300.00
1953	320.00
1954	346.00
1955	370.00

In comparing the ratio of production of the Soviet Union's European region and the Eastern region, it can be seen that, on the whole, the importance of the Soviet Union's Eastern region has increased tremendously since the beginning of the 20th Century. In reducing the coal deposits in the USSR to percentages and their locations in chart form, we observe the following.

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Coal Deposits and Their Location in the USSR
(In Percentage of Total Yearly Output)

<u>Basins & Regions</u>	<u>1913</u>	<u>1928</u>	<u>1932</u>	<u>1937</u>	<u>1940</u>	<u>1950</u>
Donets	86.9	77.0	69.7	60.6	51.5	35.2
Moscow Area	1.0	3.2	4.0	5.9	6.0	9.6
Urals	4.2	5.6	4.9	6.3	---	---

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Kuznetsk	2.7	7.4	11.2	13.9	—	—
Eastern Siberian	1.9	2.9	3.8	4.0	—	—
Far Eastern	1.2	3.0	3.5	3.7	—	—
Karaganda	—	—	1.1	3.1	—	—
Central Asiatic	0.5	0.6	1.1	0.7	—	—
Other Regions	0.6	0.3	0.7	1.8	42.9*	55.2*
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

* 55.2, 42.5 indicates the sum total for the Urals, Kuznetsk, Eastern Siberia, Far East, Karaganda, Central Asiatic Regions, and other districts. Data on the production in each district cannot be obtained at this time.

From this chart, it can be clearly seen that: 1) The coal mines in the European sector of the Soviet Union, especially those of the Donets River basin, are rapidly declining in importance.² 2) Their percentage in relation to the total Soviet Union production for the past 20 years has decreased in half. The antithesis in the marked decline of the European Soviet in its overall importance is due to the increase in the relative importance of the Far Eastern Soviet region (Soviet Eastern region). The Soviet Eastern region has shown tremendous increase from 20 per cent in 1928 to 55.2 per cent in 1950, to 60 per cent in 1954. In converting this into actual figures, we see that the 1954 production in the Ural Eastern region was 206 million tons and the Soviet European region was 138 million tons.

As mentioned previously, the tendency for the center of the coal production zone to gradually move to the Far East, increased its tempo tremendously during World War II. The following is the general result in briefly describing the details during this period. In other words, among the European Soviet coal mines which, during World War II, had produced more than 100 million tons annually, 1,135 were destroyed. With the goal of regaining the production level based on these figures, positive operations were carried out to develop and equip the coal mines of the Eastern regions in 1942-1944, and it was known that the production in the Eastern region had already reached 73 million tons at that time. Later, as a result of successive emphasis on the development of coal mines in the Eastern region, at the closing period of the great war, the percentage of production in non-European

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actions in the overall Soviet coal production was overwhelming. In addition, although the reconstruction of the Donets River basin region after the war had been advanced (98 million tons were produced in 1950, which exceeded the 85 million tons for 1940), the relative importance of the region decreased from 51.5 per cent to 31.2 per cent, as seen from the following chart.

In summarizing what we have stated up to now, we find that: 1) The revival of coal production after the war is being advanced with considerable speed; however, 2) A greater part of this production has resulted from the development of new mines in the Eastern region of the Soviet Union, whereas the revival of former coal mines in the European side of the Soviet Union has been relegated to a position of secondary importance; 3) Out of the average of approximately 20 million tons to 24 million tons of increased production annually, a minimum 15 million to 17 million tons are being produced as a result of the new development.

5. The Relationship Between Current Production Rate and Demand Throughout the Soviet Union.

The figure which was established by STALIN in 1946, as the long range goal for industrial production is believed to be of aid in considering whether the Soviet Union's coal production has now reached an adequate level. STALIN, in order to avoid the fuel crisis in the Soviet Union and in order to maintain a sufficient supply of raw fuel for the chemical industry, maintained that there must be an annual production of 500 million tons. He announced that the following goals would have to be reached: 260 million tons for 1950; 346 million tons for 1954; 372 million tons for 1955; and 500 million tons for 1956. Since 18.2 per cent increase was seen during the first six month period of 1954 over the 1953 figure, it can be assumed that in 1955, the final year of the Fifth Five Year Plan, the goal which STALIN had set up had been reached. Furthermore, on the basis of the production rate of the Fifth Five Year Plan (1951 to 1955), it is believed that it would not be too difficult to reach the 500 million ton goal in the Sixth Five Year Plan.

However, from subsequent changes in the international situation, and from increasing military demands, the 500 million ton goal may not necessarily fulfill Soviet needs, as pointed out in the editorials in Pravda and Izvestia. Pravda has stated repeatedly that the development of heavy industries and the development of Soviet economy will be largely affected by the progress of the coal industry, and pointed out the fact that production is not being carried out to the extent of fully satisfying the current Soviet requirements. On 12 Jul 1954, an article in Pravda entitled "Why is Mine Construction Delayed?" stated: "The work on the coal mines is far behind schedule and there are numerous instances where they (mines) are still incomplete. As a result, further increase in coal production is difficult. The Ministry of Coal Industry has achieved very little success in reducing the hours required in construction. In fact, the situation is such that many of the coal mines which should have been in operation last year have only started to operate this year. Funds for capital construction in the coal mine regions are being

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inappropriately distributed and plans for developing new mining regions during the past three years have been constantly in a chaotic condition." In addition, there are many essays which point out the excessive delays in the various types of capital constructions (including houses for laborers) necessary in mine operations, the lack of necessary technicians, the disreputability of management, and the low level of labor productivity. (See journal Master Uglya No. 6, 1954; Master Uglya No. 7, 1954; Pravda, September 5, 1954; an article by G. EMCHENKO; and others are examples of this.) In analyzing the tone of these various essays, the conclusion can be reached that, in the coming Soviet coal production, although it is possible to achieve the goal as established in the Sixth Plan, there exists various problems, and that in order to fully satisfy the present needs of the nation, considerable difficulties will be encountered.

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